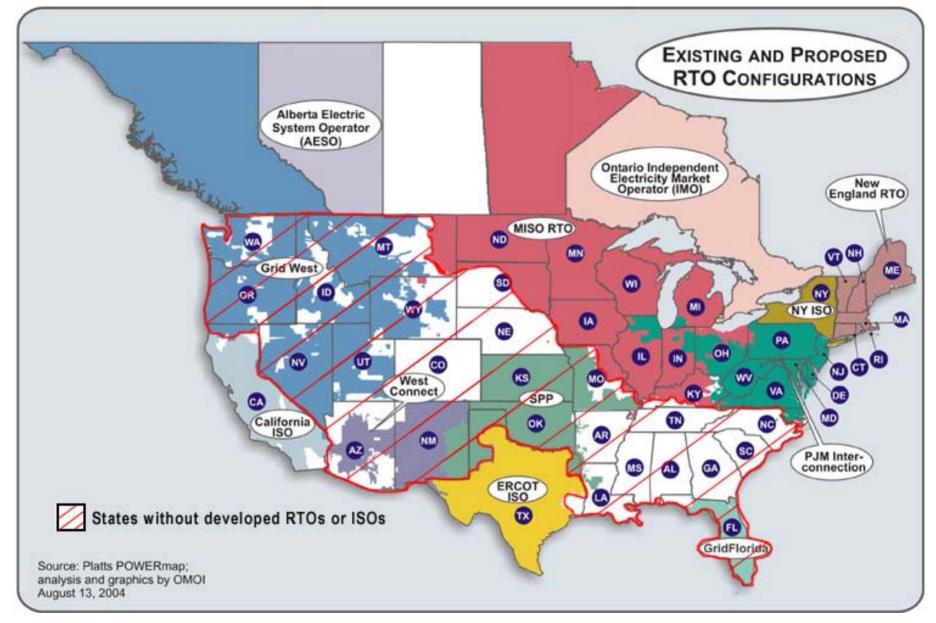
# Comparative Analysis of RTO/ISO Operating Costs

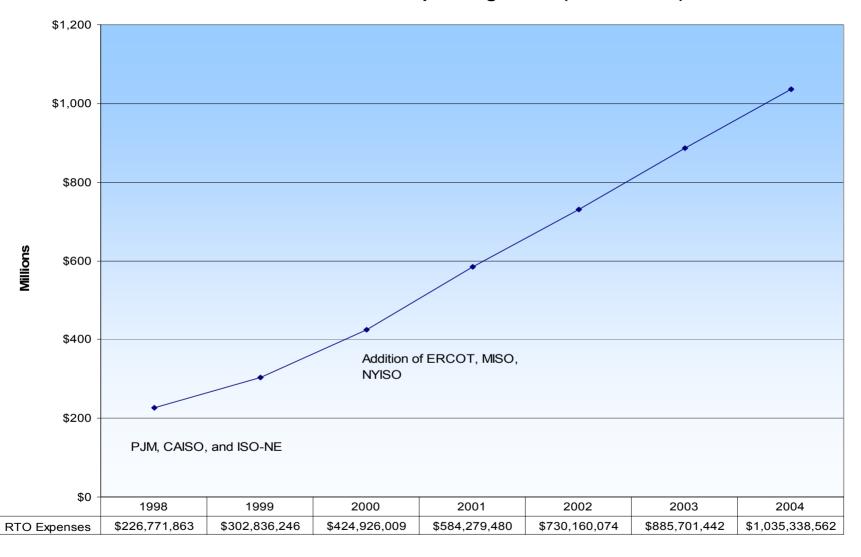
August 17, 2004

Margot Lutzenhiser Associate Economist Public Power Council

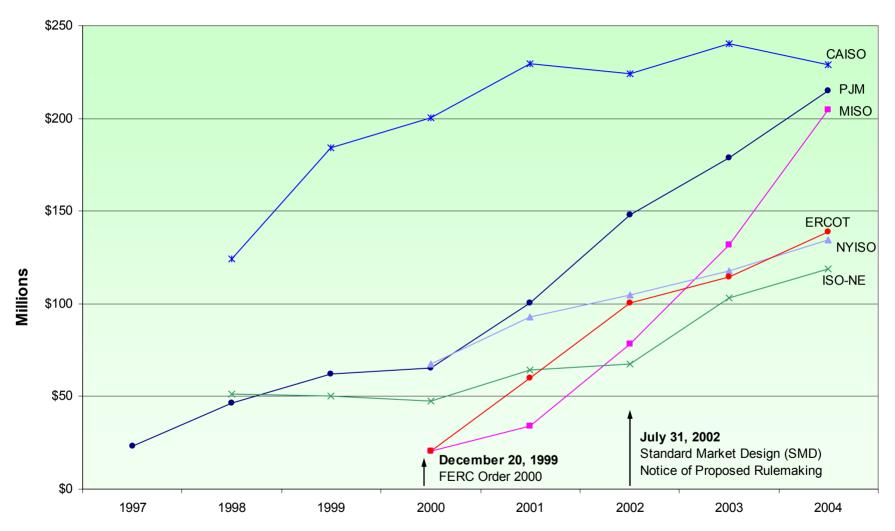


**Source:** http://www.ferc.gov/industries/electric/indus-act/rto/rto-map.asp

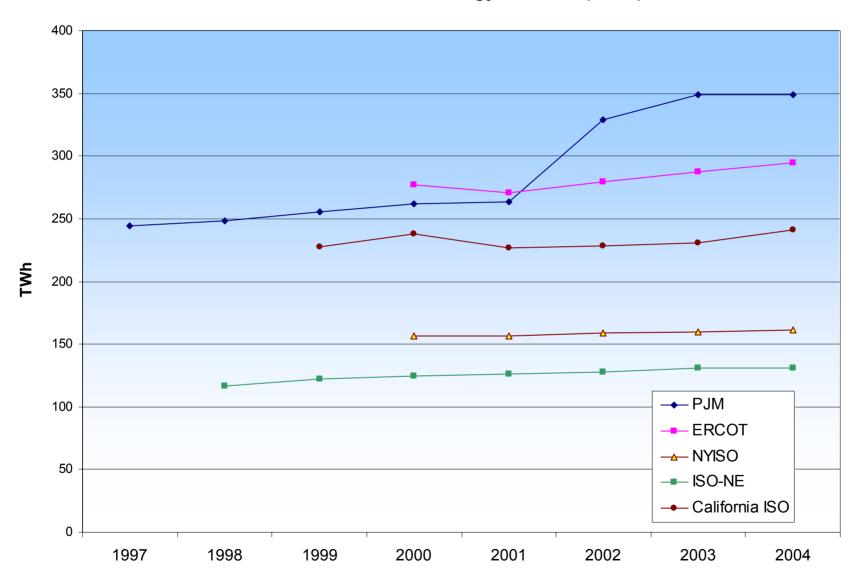
Annual U.S. RTO/ISO Operating Costs (2003 dollars)



# ISO/RTO Annual Operating Costs (Including Amortization, Depreciation and Interest Expenses in 2003 dollars)



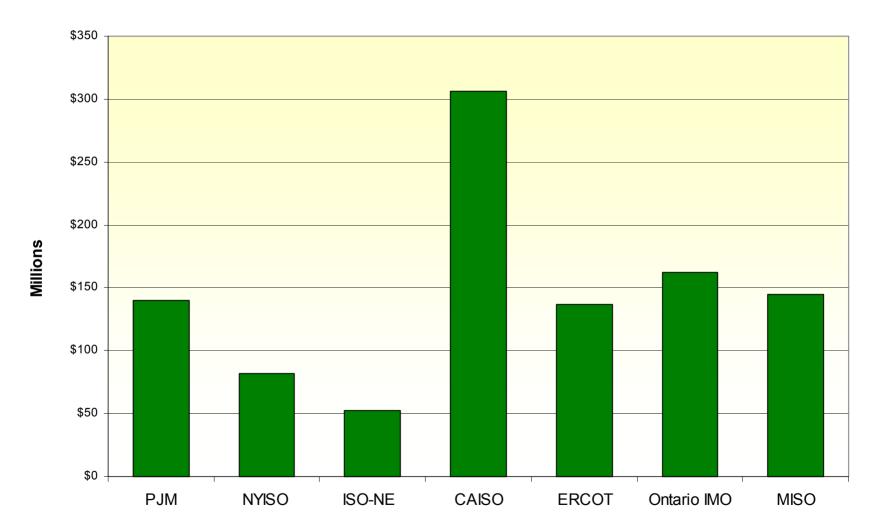
### ISO/RTO Net Annual Energy Demand (Load)



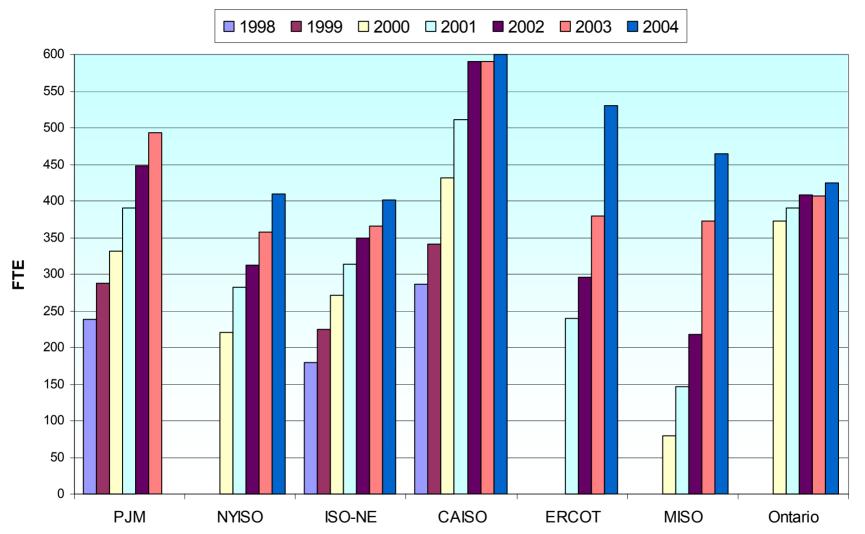
# RTO/ISO \$/MWh Annual Operating Costs (2003 Dollars)



# **RTO/ISO Start-Up Costs**

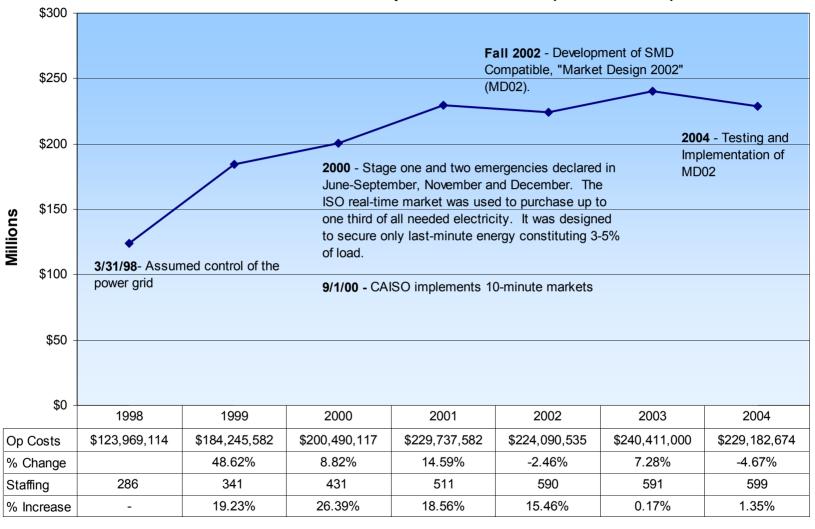


#### ISO/RTO Staffing Levels

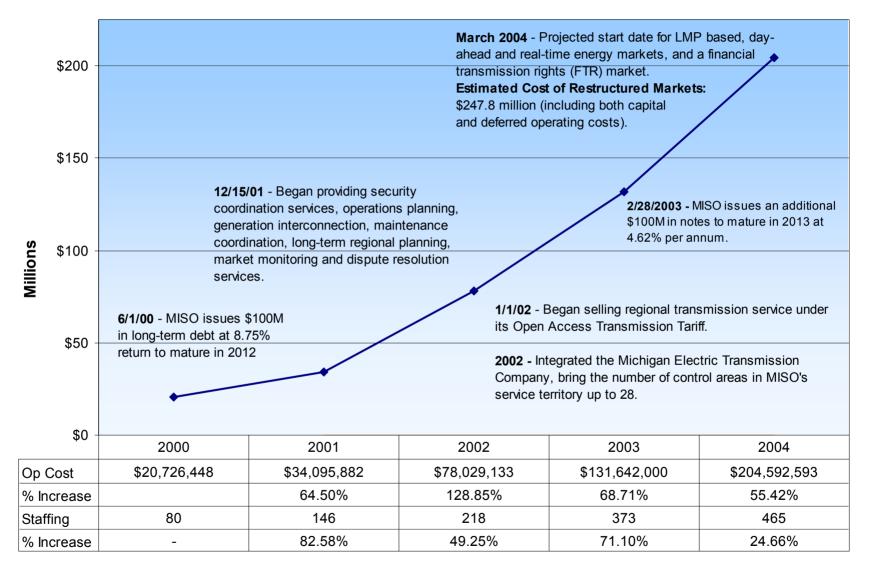


\*It is unclear whether contractor are included in some data points. FERC Form 1 data does not include contractors. For consistency, contractors have been excluded whenever possible. (Sources provided on slides 16-18.)

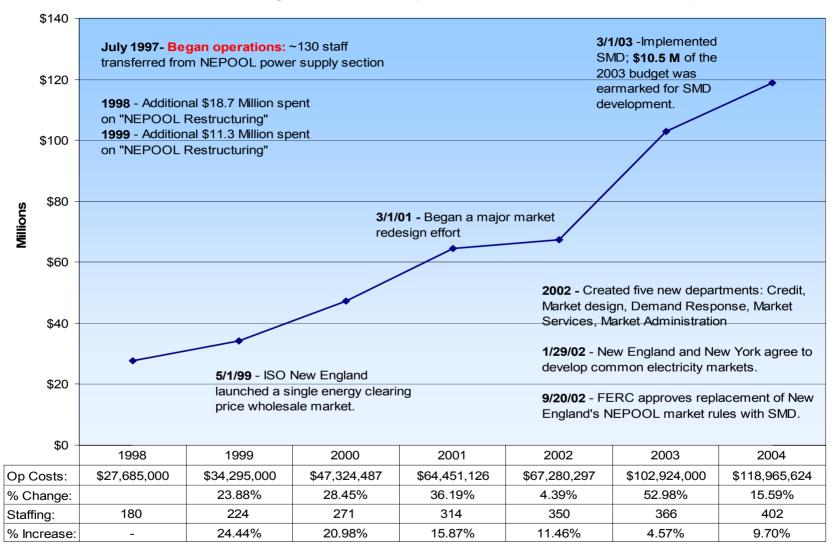
#### California ISO Annual Operational Costs (2003 dollars)



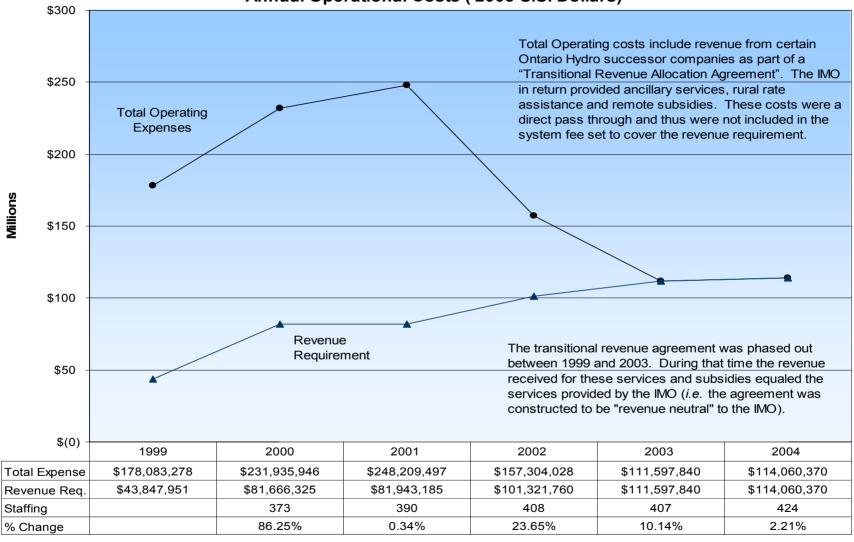
#### Midwest ISO Annual Operating Costs (2003 Dollars)



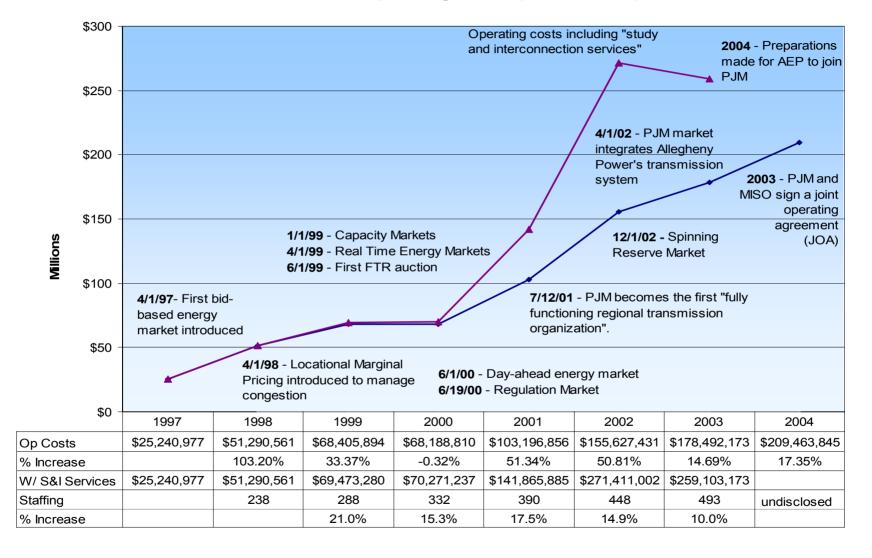
#### ISO New England Annual Operational Costs (2003 Dollars)



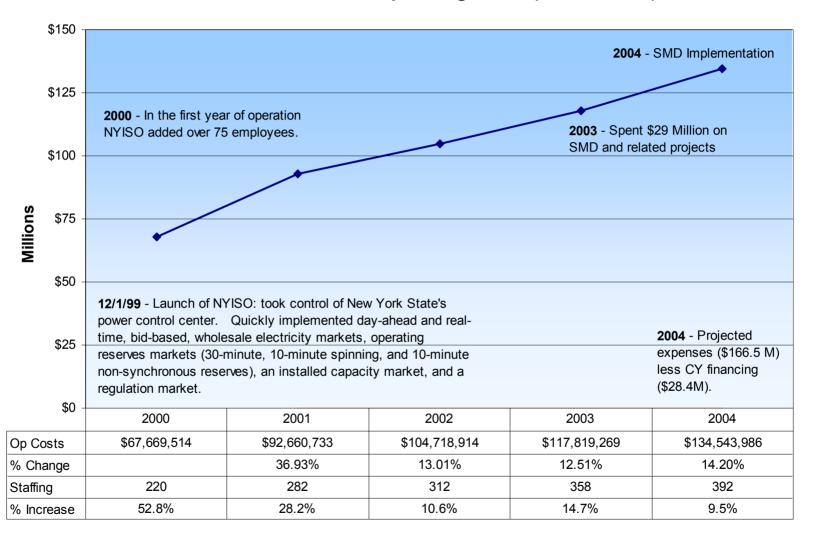
#### Ontario Independent Market Operator (IMO) Annual Operational Costs (2003 U.S. Dollars)



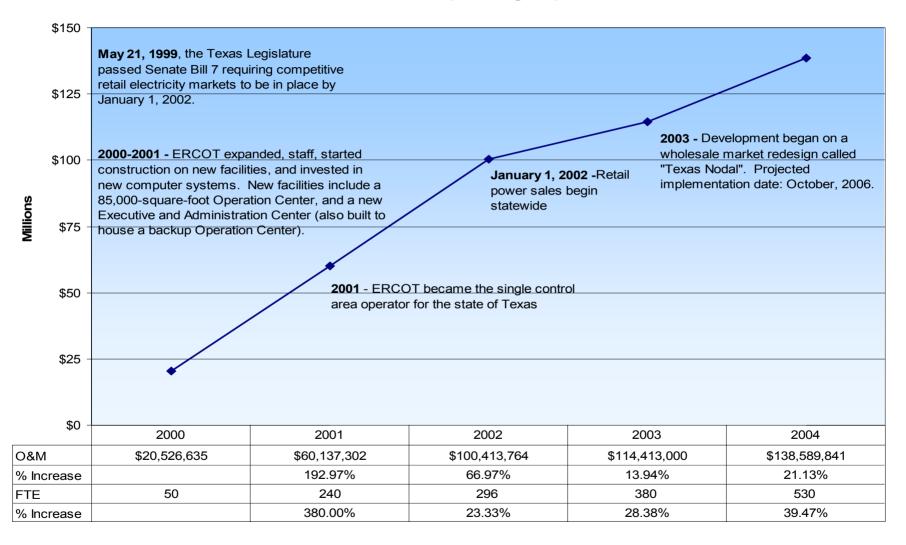
#### **PJM Annual Operating Costs (2003 Dollars)**



#### **New York ISO Annual Operating Costs (2003 dollars)**



#### **ERCOT Annual Operating Expense**



#### **Data Sources:**

#### PJM:

**O&M, Amortization, Depreciation, and Interest Expense**: 1997-2003 (FERC Form 1 submissions); 2004 (Approved 2004 Budget and Service Category Rates, 10/28/2003).

**Annual Energy:** 1997-1999 (1999 Annual Report on Operations); 2000 (2000 Annual Report on Operations); 2001 (2001 Annual Report on Operations); 2002-2003 (Corresponding Annual Reports); 2004 (Approved 2004 Budget and Service Category Rates, 10/28/2003).

**Staffing Levels:** 1998-2001 (FERC Form 1 submissions); 2002 (448 employees as of 9/30/2002 noted in PJM's 2002 3rd Quarter Financial Statement); 2003 (*NYISO 2003 Budget Review* for the Budget, Performance, and Standards Committee, 9/30/2002).

**Start-up Costs:** PJM staffers indicated that they have not calculated their overall start-up costs. Estimate provided by the *Ontario IMO 2001-2003 Business Plan*, 11/13/2000, pg. 41.

#### **New York ISO:**

**O&M, Amortization, Depreciation, and Interest Expense:** 2000-2003 (FERC Form 1 submissions); 2004 (NYISO 2004 Budget Report for the Budget, Standards and Performance Subcommittee, 11/12/2003).

**Annual Energy:** 2000-2002 (NYISO 2003 *Gold Book - Load and Capacity Data*); 2003-2004 (Backed into using revenue requirements and \$/MWh rates in *NYISO 2004 Budget Report*, 11/12/2003).

**Staffing Levels:** 2000 (*Annual Report*); 2001 (NYISO *Budget vs. Actual Result*s, February 2002); 2002 (2003 *Budget Review*, 9/30/2002); 2003-2004 (2004 *Budget Overview*, 9/26/2003).

Start-up Costs: Tabors Caramanis RTO West Cost Benefit Study, 3/11/2002.

#### **ISO New England:**

**O&M**, **Amortization**, **Depreciation**, **and Interest Expense**: 2000-2002 (Corresponding *Annual Reports*); 2003 (2003 Final Audited Financial Statement, 3/3/2004); 2004 (ISO-NE March Forecast for End of Year 2004, March 2004).

**Annual Energy:** 1998-2004 (1999-2004 Annual Capacity, Energy, Loads, and Transmission (CELT) Reports, Note: 2004 is a forecast).

#### **ISO New England Cont.**

**Staffing Levels**: 1998-2001 (FERC Form 1 Submissions); 2002 (*Annual Report*); 2003 (NYISO *2003 Budget Review*, 9/30/2002); 2004 (*ISO-NE March Forecast for End of Year 2004*, March 2004, Note: Projected FTE). **Start-up Costs**: FERC order "Accepting for Filing and Suspending Cost Recovery Proposal, Subject to Refund and Establishing Hearing", Docket No. ER99-4235-000, 10/13/1999.

#### California ISO:

**O&M**, **Amortization**, **Depreciation**, **and Interest Expense**: 1998-2002 (FERC Form 1 submissions); 2003 (*December Monthly Financial Report*, 12/31/2003 Note: Actual 2003 numbers - unaudited); 2004 (*Proposed FY2004 Operating & Maintenance Budget and Capital Budget*, 9/18/03).

**Annual Energy:** 1998 (2000 Annual Report on Market Issues and Performance, November 2001); 1999-2001 (2002 Annual Report on Market Issues and Performance, April 2003); 2002-2003 (2003 Market Performance Review from the Office of Market Analysis, April 2004); 2004 (Proposed FY2004 Operating & Maintenance Budget and Capital Budget, 9/18/03).

**Staffing Levels:** 2000-2001 (FERC Form 1 submissions); 2002 (*Proposed FY 2003 Budget*, 10/16/2002, Note: "revised and approved staffing" level); 2003 (*December Monthly Financial Report*, 12/31/2003); 2004 (*Proposed FY2004 Operating & Maintenance Budget and Capital Budget*, 9/18/2003 Note: projected FTE).

**Start-up Costs:** *Financing Plan Execution*, 4/23/1998.

#### **ERCOT:**

**O&M, Amortization, Depreciation, and Interest Expense:** 2000-2003 (2003 Annual Report); 2004 (2004 Texas PUC rate filing (Docket # 28832)).

**Annual Energy:** 2000-2004 (2004 Texas PUC rate filing - Docket # 28832, Note: 2001-2002 are actuals, 2003 is part actual and part budgeted and 2004 is budgeted).

**Staffing Levels:** 2000, 2001, 2003 (2003 Annual Report); 2002 (Estimate based on rate filing information); 2004 (2004 Texas PUC rate filing (Docket # 28832)).

Start-up costs: Start-up Costs: Tabors Caramanis RTO West Cost Benefit Study, March 11, 2002.

#### **Midwest ISO:**

**O&M costs, Amortization, Depreciation, and Interest:** 2000-2003 (Corresponding *Annual Reports*); 2004 (*Updated 2004 Budget Presentation*, 3/18/2004, Note: original budget from MISO *Budget Advisory Committee Presentation*, 12/10/03).

**Annual Energy:** MISO does not collect or compute annual energy demand at this time. Estimates of MISO annual demand calculated using FERC Form 1 submissions of MISO membership.

**Staffing Levels:** 2000 (MISO Order 2000 Compliance Filing (RT01-87-000); 1/16/2001); 2001, 2002, 2004 (2004 Budget Advisory Committee Presentation, 12/10/2003.); 2003 (2003 Annual Report).

Start-up Costs: MISO 2000 Annual Report.

#### **Ontario IMO:**

**O&M**, **Amortization**, **Depreciation**, **and Interest Expense**: 1999-2002 (Corresponding *Annual Reports*); 2003 (2003 Final Audited Financial Statement, 1/12/04); 2004 (IMO Business Plan 2004-2006 Financial Overview, 9/30/2003).

**Annual Energy:** Demand Overview section of Ontario IMO's webpage:

http://www.theimo.com/imoweb/media/md\_demand.asp

**Staffing Levels:** 2000, 2002 (*IMO Business Plan 2001-2003*, 11/13/2000); 2002 (*Annual Report*); 2003-2004 (*IMO Business Plan 2004-2006 Financial Overview*, 9/30/2003 Note: 2003 is projected, 2004 is budgeted).

Start-up Costs: Ontario IMO 2001-2003 Business Plan, 11/13/2000.